REMARKS

Entry of the foregoing, further examination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, Claims 1-15 and 17-20 were pending. By the present response, Claims 1 and 6 have been amended. Support for the amendment to Claim 1 can be found at least at page 3, lines 24-25 of the specification. Support for the amendment to Claim 6 can be found at least at page 5, lines 5-10 of the specification.

Upon entry of the present response, Claims 1-15 and 17-20 are pending and await further consideration on the merits.

CLAIM REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 1 and 6 stand rejected under 25 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While not acquiescing in the rejection, Claims 1 and 6 have been amended in a manner which obviates this rejection.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 1-11 and 18-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,951,119 to Quenzer (hereafter "*Quenzer*") and in view of the publication Compact Self-Aligning Assemblies with Refractive Microlens Arrays made by Contactless Embossing by Schulze (hereafter "*Schulze*"),

and further in view of U.S. Patent No. 6,951,119 to Marechal (hereafter "*Marechal*") on the grounds set forth in paragraph 3 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to a method of treating a surface of a pre-existing optical lens in order to improve the optical properties of the previously-formed lens. A method performed according to the principles of the present invention is set forth in claim 1.

Claim 1 recites a method for follow-up treatment of the contour of the surface of at least one optical lens, the method comprising: providing an optical lens which is made of glass or a glass-type material and which has a convex lens surface delimited by a circumferential line abutting on a plane section surrounding said circumferential line and which has an opposing surface of the lens facing the convex lens surface, placing along said circumferential line of the optical lens on said plane section a means matching said circumferential line and at least laterally bordering said convex lens surface, performing a temperature treatment comprising heating said optical lens to a temperature of at least the transformation temperature of said glass or glass-type material, wherein pressure equalization prevails between said convex lens surface and said opposing surface of the lens, and removing said means from said optical lens after a period of time, during which said optical lens undergoes said temperature treatment and subsequent cooling below said transformation temperature. The steps are performed in the recited sequence.

Quenzer allegedly discloses a process for creating optical lenses (Col. 2, lines 38-40). The process includes forming a structured semiconductor substrate that is bonded to a glass-type material. The resulting electrostatic force results in an

intimate contact between the two adjacent substrate surfaces (Col. 3, lines 36-42). By annealing, the glass material is heated to a level higher than the vitrifying temperature and the glass fills the apertures in the structure surface of the semiconductor substrate to form a lens (Col. 3, lines 15-53). The negative moulds present a surface structure laterally reversed to the desired surface structure of the glass material (Col. 2, lines 25-35). However, *Quenzer* fails to disclose subsequent or follow-up treatment of a lens as recited in claim 1.

Schulze allegedly discloses a tool that is pressed into a thermoplastic sample which is heated so that the material bulges into the openings of the molding tool to form a lens-like spherical structure (Abstract). As shown in Figure 2, *Schulze's* process begins with a thermoplastic material that undergoes the fabrication process to form a microlens array by a contactless embossing scheme (page 25). However, *Schulze* also fails to disclose subsequent or follow-up treatment of a lens as recited in claim 1.

Marechal allegedly discloses a process to mold precision glass articles including preparing a glass preform, preparing a mold, exposing the preform to a temperature, exposing the mold to the temperature of the preform, applying a load to the preform within the mold, removing the glass shape and annealing the glass shape (Col. 3, lines 50-69 and Col. 4, lines 1-5). The process can be a two-step process (Col. 10, lines 42-65). However, *Marechal* also fails to disclose subsequent or follow-up treatment of a lens as recited in claim 1.

Under 35 U.S.C. § 103(a), the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. M.P.E.P. § 2142. As set forth in M.P.E.P. § 2143, one requirement for establishing a *prima facie* case of

obviousness is that the combination of references must teach or suggest all the claim features (Emphasis Added). *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As such, *Quenzer, Schulze* and *Marechal*, even if combined, fail to teach or suggest the method of the presently claimed invention including a follow-up treatment of an optical lens as recited in claim 1. Instead, *Quenzer* and *Schulze* relate to the initial forming of a lens from a flat substrate, and *Marechal* discloses molding a preform to form glass articles. In particular, *Quenzer* is directed to a method for creating a curved or contoured surface on at least one side of a flat glass-like substrate (3) in the first instance, not a follow-up treatment on a preexisting contoured lens surface. Likewise, *Schulze* discloses techniques for taking a flat piece of material and creating a curved or contoured surface on at least one side thereof. This is clearly illustrated in Figures 2-3 of *Schulze*. As with *Quenzer* and *Schulze*, *Marechal* also fails to disclose, or even suggest, a follow-up treatment of the contour of the surface of at least one optical lens **having a convex surface**, as clearly required by claim 1. Thus, even if combined as suggested in the Office Action, the follow-up treatment of claim 1 would not result as the references, in particular, fail to suggest, at least, providing an optical lens, placing along said circumferential line of the optical lens on said plane section a means matching said circumferential line and at least laterally bordering said convex lens surface, and performing a temperature treatment comprising heating said optical lens as recited in claim 1.

Moreover, *Quenzer* and *Schulze* teach away from the Office Action's proposed two step process. *Quenzer* discloses a method whereby electrostatic

force results in an intimate contact between the two adjacent substrate surfaces (Col. 3, lines 36-42). In contrast, *Schulze* discloses a contactless embossing scheme whereby the surface of the microlens produced by the process does not contact the compression molding tool during the shaping process (Abstract). Where, as here, a reference, when considered in its entirety, teaches away from the claimed invention, it is improper to combine the references. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). As such, Claim 1 is further patentable over the references as combined because both *Quenzer* and *Schulze* teach away from the proposed combination and thus from the claimed invention and *Marechal* fails to remedy this deficiency.

The remaining claims rejected on the above-noted grounds depend from Claim 1, and are also distinguishable over *Quenzer* in view of *Schulze* and *Marechal* for at least the same reasons noted above.

In addition, claim 6 additionally requires that an elliptical gradient on the contour of the pre-formed optical lens, and that this gradient is reduced or eliminated through the steps taken by the method of the presently claimed invention. It is alleged that *Quenzer* teaches this aspect of claim 6 at column 8, lines 22-35. This assertion is respectfully traversed. This portion of the *Quenzer* disclosure is reproduced below:

> *For maintaining the concave dents forming on the upper side of the glass wafer (3) during the annealing process, which upper side is turned away from the SI wafer (2) and which dents are provided to serve technological applications of interest, as will be set out in the following, the structured surface of the Si wafer (2) should have dents of the structure widths B and the glass wafer (3) should have a thickness D, which satisfy the following relationship:*

> $B \geq 0.1D$
> *In this manner it will be ensured that the material flow into the recesses will actually produce the desired effects on the opposite side of the glass wafer (3) and results in the concave dents.*

This portion of *Quenzer* refers to concave "dents" formed on the surface of a flat substrate through the melt flow process of *Quenzer.* It does not contain any reference whatsoever to the elimination of an elliptical gradient present on the curvature or contour of a surface of a pre-existing or a pre-formed optical lens. To reiterate, *Quenzer* discloses a technique whereby such an elliptical gradient is created in the first place. Thus, claim 6 is distinguishable over *Quenzer* in view of *Schulze* and *Marechal* for at least this additional reason.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: September 15, 2010

By: Nancy K. Britt

Nancy K. Britt
Registration No. 57856

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620